

pubnub

The interactive streaming playbook

Transform passive viewers to active participants

A strategic guide to interactive media innovation for sports, media & entertainment leaders



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Executive summary

Interactive media has moved from a "nice-to-have" to a "must-have." Viewers expect to participate, not just watch. To achieve higher engagement, stronger retention, and new revenue, this playbook shows you what to build and how to launch it without slowing down your roadmap.

Who this is for



Business leaders

at streaming platforms, sports organizations, and media companies who want measurable growth



Technical leaders

evaluating real-time architecture and platform readiness



Product managers

designing next-generation viewing experiences



Monetization owners

testing new revenue models

What changes when you go interactive

40%

higher engagement and interaction rates

25%

increase in ARPU from diversified monetization

35%

reduction in churn from stronger community and stickiness

60%

higher conversion rates for subscriptions and in-app purchases



What you'll learn here

- ✔ How to hit sub-100ms latency so interactions feel truly live across every device
- ✔ How to deliver synchronous, brand-safe features on Smart TV, mobile, and web with one API strategy
- ✔ Where AI-driven personalization outperforms historical recommendations
- ✔ Which social features (chat, reactions, watch parties) drive stickiness fast
- ✔ How to phase your rollout to prove ROI and scale with confidence

The convergence of technology maturity, consumer expectations, and business model evolution creates a perfect opportunity for interactive media transformation. Organizations that act now will establish competitive advantages that become increasingly difficult to replicate.

Introduction

Your audience no longer wants to sit back; they want to participate. Over the past decade, the interactive media landscape has shifted from one-way broadcasts to two-way experiences. Viewers expect to react, vote, chat, and influence what happens next in real-time, and on any screen.

The problem

Passive viewing is no longer enough

Traditional broadcasting treated viewers as passive observers, a tactic that worked when choice was limited. Today, especially for younger audiences, participation is the expectation as mobile and smart devices increasingly dominate attention, monetization, and the narrative. Audiences want to feel connected: to the story, the community, and the moment.

Who this guide is for

If you own growth, product, or platform reliability, this is for you:

- CEOs and business leaders seeking defensible differentiation and revenue growth
- CTOs and technical directors evaluating real-time infrastructure and latency targets
- Product managers and marketers designing features that keep users coming back and monetizing experiences through advertisements and sponsorships
- Developers and engineers implementing cross-platform, sub-100ms interactions

What you'll get



Market insights

What's driving interactive adoption—and what actually moves the numbers



Technical roadmap

How to design for sub-100ms at broadcast scale across TV, mobile, and web



Competitive playbook

What leaders ship (and why it works)



Implementation framework

A phased rollout you can run this quarter



Future readiness

AI, VR/AR, and what to watch next

Chapter 1

The interactive media revolution

Market overview and driving forces

The streaming media industry is in the middle of a paradigm shift that extends far beyond technological upgrades. This transformation represents a fundamental change in how audiences expect to consume and interact with content, driven by generational preferences, competitive pressures, fragmented content ecosystems, and technological capabilities converging at scale.



The scale of transformation

Market

\$280B attention economy; interactive commands 40% higher CPMs.

Behaviour

86% of ages 18–34 engage in interactive viewing.

Revenue impact

- ↑ +40% engagement and interaction rates
- ↑ +25% ARPU via diversified monetization
- ↓ –35% churn from stronger community
- ↑ +60% conversions for subs and in-app purchases

Key market drivers

1 Consumer expectation evolution

Modern audiences, particularly those who grew up with social media and gaming, expect to influence and participate in their entertainment experiences. They want to vote on outcomes, chat with fellow viewers, access real-time information, and feel like they are part of a community rather than isolated observers. Much of this change is influenced by generational markers, but it affects groups and viewing across the broadcast industry:

Gen Z and Millennials

show 18% and 9% higher preference respectively for personalized content recommendations

29% of younger viewers

actively seek content that others are discussing on social platforms

Multi-screen usage

has become standard, with 88% of U.S. viewers using second devices during TV time

2 Technology infrastructure maturity

The convergence of several technological advances has made large-scale interactive media feasible.

Ultra-Low Latency Networks: Modern streaming protocols and edge computing infrastructure enable sub-100ms global message delivery, making real-time audience participation possible at a massive scale. This latency reduction eliminates the delay that previously made interactive features feel disconnected from live content. It also enables layered engagement with nanosecond-based timestamps in traditional appointment-based media to create experiences that feel real-time— even when they're not.

Smart TV and Mobile Platform Development: Native SDKs for Smart TV platforms (Samsung Tizen, LG webOS, Roku, Apple TV, Android TV) combined with mobile-first development frameworks enable consistent interactive experiences across all viewing devices. The same interactive features that work on smartphones now integrate seamlessly with 75-inch living room displays.

Cloud Computing and Edge Optimization: Scalable cloud infrastructure with edge computing capabilities supports millions of concurrent interactive connections during major live events. This infrastructure eliminates the technical barriers that previously limited interactive features to small audiences or experimental deployments.

3 Competitive market dynamics

Platform Differentiation Pressure: With content becoming increasingly commoditized across streaming platforms, interactive features provide differentiation opportunities that can't be easily replicated through content licensing alone. Platforms need unique value propositions that encourage audience loyalty and reduce churn.

Monetization Innovation Requirements: Traditional advertising and subscription models face pressure from ad-blocking, subscription fatigue, and increased competition. Interactive features enable new revenue streams including live commerce, gamified advertising, social betting, and premium interactive experiences.

Interactive media use cases across industries



Sports and live events

Sports broadcasting is leading interactive media adoption; billions of dollars have been and continue to be invested in broadcast and interactive rights. In order to better monetize these investments, broadcasters and rights-holders leading the charge now aim to bring stadium-like energy to living room viewing. Features like real-time social reactions, live betting integration, instant statistics overlays, and community participation in predictions and challenges can revive that in-stadium feel from the comfort of home.

Major sports leagues implementing interactive viewing features have reported 40% higher engagement during live events, with viewers spending 60% more time in-app compared to traditional broadcasts.



Streaming platforms and OTT services

Streaming platforms integrate watch parties, live chat, and social discovery to transform solitary viewing into community experiences. These features encourage content discovery, increase watch time, and create emotional investment in platform ecosystems.



News and media organizations

News organizations transform one-way broadcasts into community discussions through time-critical and personalized alerts, real-time polls, Q&A sessions, expert commentary, and audience-driven story development. This participation increases time spent engaging with news content and builds stronger audience relationships.



Live commerce and shopping

Live commerce platforms integrate real-time inventory updates, social shopping features, countdown timers, and community reviews to create urgency and social proof that drives purchasing decisions during live broadcasts, enabling monetization in new, engaging ways.

Key takeaways

- ✔ Interactive media is transitioning from experimental to essential for competitive positioning in streaming, sports, news, and commerce applications
- ✔ Measurable business impact includes 40% engagement increases, 25% ARPU growth, and 35% churn reduction for comprehensive implementations
- ✔ Technology infrastructure has matured to support real-time interactive experiences at global scale with sub-100ms latency
- ✔ Consumer expectations have evolved toward participation and community rather than passive consumption, particularly among younger demographics
- ✔ Revenue opportunities extend beyond traditional models through interactive advertising, live commerce, social features, and premium experiences

The interactive media revolution represents both opportunity and necessity for media organizations. Those who adapt quickly will establish competitive advantages and audience relationships that become increasingly difficult for competitors to replicate.

Chapter 2

Real-time engagement technologies

Infrastructure requirements and technical innovation

The foundation of successful interactive media experiences rests on robust, scalable real-time infrastructure that can handle millions of concurrent users while maintaining ultra-low latency, providing feature flexibility, and trend-based instant optimization. This chapter examines the technical requirements, architectural considerations, and emerging technologies that enable interactive media at scale.

Core technical requirements



Ultra-low latency (<100ms)

- ✓ Feels live across TV, mobile, and web, reducing the chance of “spoilers” and accommodating key moments in-session.
- ✓ Achieved via optimized infrastructure, global edge, and smart routing.

Cross-platform consistency

- ✓ One API, native SDKs for Smart TVs and mobile, and platform-specific optimizations provide a single thread across multiple devices.



Real-time engagement feature categories

Social viewing and community

-  Live chat, reactions, polls, and moderation at scale foster community-building and in-person feel from afar.
-  Watch parties and co-viewing replicate the excitement and camaraderie of in-person experiences.

Interactive content and gamification

-  Branching narratives, live trivia, predictions, and challenges that adapt in real time to events in-stream or onscreen create conversations and foster interactions that keep viewers engaged.
-  Badges, points, leaderboards, and exclusive access drive retention as participants are able to adopt a sense of pride and accomplishment through live activities.

Real-time data and personalization

-  Overlays of stats, event context, and on-demand details without interrupting viewing add an extra layer of interest in the age of multiscreens and multitasking.
-  AI can use real-time context (device, time, and social signals) to beat historical-only context.

Implementation considerations



Safety and compliance

Interactive features require robust fraud detection systems that operate in real-time to prevent abuse, manipulation, and security threats without impacting legitimate user experiences. Additionally, privacy regulations like GDPR and CCPA require careful consideration of how user data is handled. Large-scale interactive platforms also require sophisticated content moderation systems that balance free expression with community standards, using both AI automation and human oversight to maintain a brand-safe environment.



Development and integration

Successful interactive platforms provide comprehensive APIs, SDKs, and development tools that enable rapid feature implementation across multiple platform types. Clear documentation and developer support reduce integration complexity and time-to-market. Interactive features must also be designed to handle sudden traffic spikes during viral content or major live events.

Key takeaways

- ✔ Ultra-low latency is essential for maintaining the illusion of real-time interaction and preventing user disengagement
- ✔ Cross-platform consistency requires unified APIs and native SDKs for Smart TV, mobile, and web platforms
- ✔ Scalable architecture must handle millions of concurrent users, live optimization, and feature flexibility during major live events
- ✔ AI and machine learning enable personalized interactive experiences that adapt to individual preferences and context
- ✔ Security and compliance considerations require real-time fraud detection and privacy-compliant data handling

Real-time engagement technologies form the foundation for all interactive media experiences. Organizations that invest in robust, scalable infrastructure position themselves to deliver innovative features that drive measurable business outcomes while adapting to evolving audience expectations.



Chapter 3

Platform innovations and consumer behavior

How leading platforms are adapting to new viewer expectations

The most successful broadcast, streaming, and social platforms are rapidly evolving their strategies to accommodate changing viewer behaviors and expectations. This chapter examines specific platform innovations, consumer behavior patterns, and the strategic approaches driving measurable business results.

Evolving consumer behavior

Community and Social Viewing Evolution

- ✔ Virtual Watch Parties: Synchronized viewing experiences gained prominence during pandemic lockdowns but continue driving engagement by enabling shared experiences regardless of geographic distribution.
- ✔ Creator-Audience Relationship Evolution: Audiences increasingly expect direct interaction with content creators through live streams, Q&A sessions, behind-the-scenes content, and social media engagement. This expectation influences content creation strategies and platform feature development.



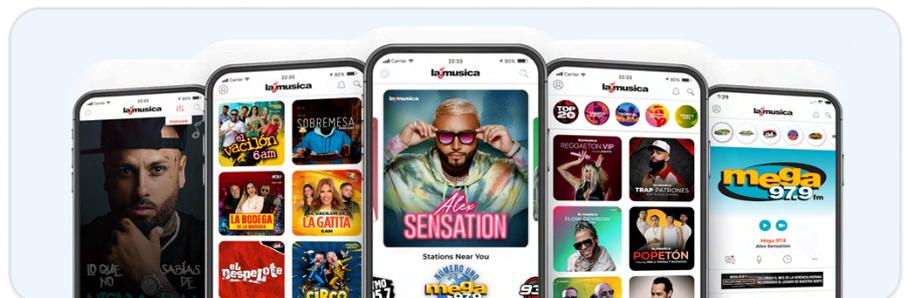
Community-Driven Streaming

The LaMusica Model

Spanish Broadcasting System's LaMusica platform demonstrates how streaming services can transform from passive consumption to active community experiences. "The audience becomes part of the program," explains Dennis La Ocha, Director of Technology, Spanish Broadcasting System, highlighting how real-time chat integration elevated every metric across their platform.

The evolution extends far beyond basic chat functionality. Where traditional radio limited contests to "caller number 9," type scenarios, LaMusica now enables universal participation through interactive online contests: "Now, everybody gets through. Everybody has a chance to participate. You're all entered to win by just participating in the chat." This inclusive approach creates sustained engagement that fundamentally changes user behavior.

Perhaps most significantly, interactive features solve the industry's advertising retention challenge. "Even during the commercial breaks, now they stay because they have something to do—they can talk to each other," Dennis notes. By maintaining community conversations during ad breaks, LaMusica achieves what traditional media cannot: keeping audiences engaged precisely when they're most likely to leave.





Key takeaways

- ✔ Social discovery and community features drive content consumption and platform loyalty
- ✔ Personalization and AI-driven recommendations significantly impact user satisfaction and engagement when implemented with real-time contextual data
- ✔ Creator-audience relationship evolution demands direct interaction capabilities and community-building tools on successful platforms

Platform innovations demonstrate that interactive media success requires understanding both technological capabilities and evolving audience expectations. Organizations that adapt their strategies to accommodate these behavioral shifts while implementing robust interactive features position themselves for sustained growth and competitive advantage.

Chapter 4

Implementation strategies and business impact

Proven approaches to interactive media transformation

Successful interactive media implementation requires strategic planning, phased rollout approaches, and careful attention to both technical architecture and user experience design. This chapter examines proven implementation strategies, common pitfalls to avoid, and measurable business outcomes achieved by organizations that have successfully transformed their platforms.



Strategic implementation framework

Phase 1 (Months 1-2)

- Foundation**
- ✓ Assess latency, scalability, integrations; set <100ms target.
 - ✓ Analyze audience behavior; pick highest-value use cases.
 - ✓ Benchmark competitors; form cross-functional team.
 - ✓ Determine key feature and monetization requirements, partner considerations, and relevant regulations.

Phase 2 (Months 2-4)

- Pilot**
- ✓ Select 2–3 key features (chat, reactions, gamification).
 - ✓ Build unified API; prioritize top platforms.
 - ✓ Align content strategy; instrument analytics.

Phase 3 (Months 4-6)

- Controlled rollout**
- ✓ Ship to segments; monitor adoption and performance.
 - ✓ Establish moderation and community operations.
 - ✓ Optimize latency and reliability under load.

Phase 4 (Months 6-12)

- Full deployment**
- ✓ Roll out to all users; add personalization and advanced gamification.
 - ✓ Tie features to revenue (ads, commerce, premium tiers).
 - ✓ Continuous optimization and roadmap updates.

Common challenges and solutions

Technical Architecture Challenges



Invest in edge

optimize protocols; monitor proactively.



Cross-platform consistency

Unified APIs with native optimizations.



Scalability

Load test at scale; auto-scale; keep capacity reserves.

User Experience and Adoption Challenges



Feature discovery

Intuitive UIs, guided onboarding, natural placement.



Community operations

Policies, automation and human review, trained staff.



Content integration

Train creators; provide templates and tooling.

Measurable business outcomes

Engagement and User Behavior Improvements with Implementation

- ↑ **Engagement:** +40% session duration and interaction.
- ↑ **Consumption:** +45% content discovery via social + personalization.
- ↓ **Retention:** -35% churn; +50% MAU after interactive launches.

Revenue and Monetization Impact with Implementation

- ↑ **Revenue:** +25% ARPU; +60% conversions for subs, IAPs, commerce.
- ↑ **Advertising:** 3x CTR; 2x brand recall vs standard video.



The Death of Passive Broadcasting

How Real-Time Interaction is Reshaping Media

The era of passive live broadcast is rapidly declining as audiences demand multi-directional, interactive experiences. This transformation isn't just technological—it's fundamentally social. Consider Brazil's recent sports betting legalization, which instantly created the world's largest sports betting market, demonstrating how regulatory changes can overnight transform viewing behaviors and create new interactive opportunities.

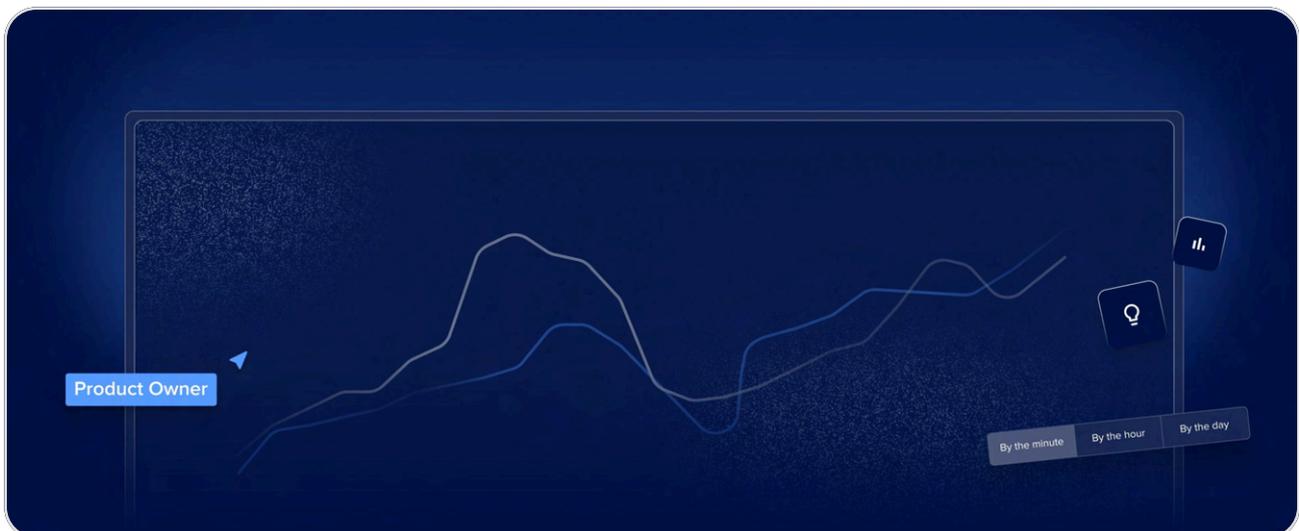
Modern streaming platforms must now orchestrate complex ecosystems where AI-driven personalization delivers automated clip generation, targeted advertising, and customized viewing angles—all synchronized with real-time social data layers. The convergence is clear: successful media experiences now require seamless integration between ultra-low latency video streaming and scalable real-time messaging infrastructure.

As Red5 CEO Chris Allen notes, "We're getting to a point with live events that it's just going to be multi-directional." The question isn't whether passive broadcasting will survive, it's how quickly platforms can evolve to meet audience expectations for authentic, personalized, and socially connected experiences.

Key takeaways

- ✔ Phased implementation approach reduces risk while enabling continuous optimization based on real user feedback and business outcomes
- ✔ Technical infrastructure investment is essential for delivering reliable, scalable interactive experiences that meet user expectations
- ✔ Community management capabilities require significant planning and investment to maintain positive user experiences at scale
- ✔ Measurable business impact includes 40% engagement increases, 25% ARPU growth, and 35% churn reduction

Implementation success requires balancing technical capabilities with user experience design, business strategy alignment, and operational readiness. Organizations that approach interactive media transformation strategically and comprehensively achieve measurable business outcomes while building sustainable competitive advantages.



Chapter 5

Future trends and preparation strategies

Emerging technologies and market positioning

The interactive media landscape continues evolving rapidly, driven by advances in artificial intelligence, network infrastructure, immersive technologies, and changing consumer expectations. Organizations that anticipate and prepare for emerging trends will establish competitive advantages that become increasingly difficult to replicate over time.

Emerging technology trends

AI and machine learning

- ✓ Advanced personalization: real-time context, mood, social signals.
- ✓ Generative creation: branches, highlights, dynamic prompts.
- ✓ Moderation at scale with contextual understanding.
- ✓ Event triggers through predictive analytics increase monetization and retention opportunities.

Immersive technologies

- ✓ VR/AR adoption, mixed reality social spaces, spatial interfaces.

Infrastructure and device ecosystem

- ✓ 5G/6G expand high-fidelity, low-latency mobile experiences.
- ✓ Edge computing reduces latency; enables regional customization.
- ✓ Decentralized models for ownership and tokenized participation.

Consumer behavior evolution



Attention Economy and Multi-Modal Experiences

As attention spans fragment across multiple devices and platforms, successful interactive media will provide coherent experiences that span different contexts and attention levels while maintaining engagement continuity. Additionally, voice and gesture interaction will enable hands-free interactive features, while wearable devices will provide biometric feedback to adapt content for optimal user experience.



Social and Community Evolution

Online communities will become more sophisticated, offering governance systems, economic models, and social structures that rival physical communities in depth and engagement. The creator economy will also expand, enabling independent creators to compete with traditional media organizations. Audience members will transition from passive consumers to active content contributors through user-generated interactive elements.



Privacy and Data Ownership Trends

Privacy regulations and consumer preferences will shift toward user-controlled data sharing models where individuals explicitly consent to specific data uses. Additionally, blockchain-based identity systems will enable users to control their personal data while maintaining seamless experiences across multiple platforms and services.

Preparation strategies for organizations

Technical infrastructure

-  Cloud-native, microservices; auto-scaling; API-first.
-  Data strategy adaptable to evolving privacy rules.
-  Security frameworks for real-time threat and compliance.

Business model

-  Diversify: social commerce, interactive ads, premium community.
-  Build partnerships and ecosystems; adapt for global markets.

Key takeaways

-  AI and machine learning will enable hyper-personalized interactive experiences that adapt in real-time to user context and preferences
-  Immersive technologies including VR, AR, and spatial computing are transitioning from experimental to mainstream adoption
-  Consumer behavior continues evolving toward community participation, creator economy engagement, and multi-modal interaction preferences
-  Privacy and data ownership trends require transparent, user-controlled data sharing models
-  Technical infrastructure investment should focus on scalable, API-first architectures that can adapt to emerging technologies

Organizations that anticipate these trends and invest appropriately in infrastructure, capabilities, and strategic positioning will establish competitive advantages that drive long-term growth and market leadership. The key is balancing current performance requirements with future capability development to maintain competitive positioning as the interactive media landscape continues evolving.

Conclusion and next steps



What matters most

Interactive isn't a feature. It's the new foundation. Teams that ship real-time, cross-platform experiences see consistent gains. The tech is ready. The playbook is here.

Ready to jumpstart (or reinvigorate) your interactive media journey?

[Talk to an expert](#) to get a tailored demo that matches your stack and goals.

Implementation roadmap

Technical infrastructure requirements

Core components:

- ✓ Real-time messaging infrastructure with <100ms global latency
- ✓ Cross-platform SDKs for Smart TV, mobile, and web environments
- ✓ Scalable cloud architecture with auto-scaling capabilities

Essential security and compliance:

- ✓ Real-time fraud detection and content moderation systems
- ✓ GDPR, CCPA, and industry-specific compliance capabilities

Key developer considerations:

- ✓ Comprehensive APIs and documentation for rapid integration
- ✓ Developer support resources and community programs
- ✓ AI-assisted development tools for accelerated feature creation

Success measurement framework

Engagement metrics	Average session duration and user interaction rates Content discovery and consumption pattern improvements Community participation and social feature adoption
Business impact indicators	Revenue per user and monetization metric improvements Customer acquisition cost and lifetime value optimization Churn rate reduction and retention improvements

Strategic positioning for continued growth

The interactive media transformation represents a fundamental shift in how audiences expect to engage with content. Organizations that recognize this shift and invest appropriately in technology, user experience, and business model adaptation will establish competitive advantages that drive sustained growth.

Key Strategic Principles

- ✔ Prioritize user experience and community building over technology showcasing
- ✔ Invest in scalable infrastructure that can adapt to emerging technologies
- ✔ Develop content strategies that integrate interactive elements naturally
- ✔ Build business models that monetize engagement and retention rather than just attention
- ✔ Create defensible competitive positions through community and platform effects

Ready to implement these strategies? [Talk to a team member](#) and we'll help you develop your engagement strategy your way.

About PubNub

PubNub is a real-time infrastructure platform that powers interactive media at global scale. With a proven sub-100ms network and 99.999% uptime, you can ship interactive features that work on Smart TVs, mobile, and web—consistently and securely.

More resources

-  All about [live audience engagement](#) with PubNub
-  How we [partnered with DAZN](#) to power an unforgettable FIFA Club World Cup 2025™ live fan experience
-  [Review technical expertise](#) tailored to your application's needs
-  [Develop your game plan](#) with PubNub

Resources and references

Industry reports

- [!\[\]\(d27108a7e74860dfc560bbe498136a6f_img.jpg\) Amira Labs: State of Streaming Media Platforms \(2024\)](#)
- [!\[\]\(ee590f550fd5e60389538d46d1a0187b_img.jpg\) NPAW: The Future of Media: Key Trends to Watch in 2025 \(2025\)](#)
- [!\[\]\(77bd2f78a921d6e2320ca465db0b5aeb_img.jpg\) GWJ: 28 Streaming Statistics and Trends for 2025 \(2025\)](#)
- [!\[\]\(51d212cc7ca9d1dde65a43bdf8b65882_img.jpg\) Arena: Second Screen Strategy \(2025\)](#)
- [!\[\]\(4005f954b4d07655bfd557cac2c2dc85_img.jpg\) Deloitte: Digital Media Trends \(2025\)](#)

Key resources and use cases:

- [!\[\]\(6c3219972f067da85e8b06c9c543b9de_img.jpg\) Major sports league interactive viewing](#)
- [!\[\]\(396bde1ab81c7ed0acd4ef6c3b580162_img.jpg\) OTT engagement and retention](#)
- [!\[\]\(d8f94c53910768abb7c17f22ba0b1121_img.jpg\) Live commerce in streaming](#)
- [!\[\]\(c17d6665ce68b1c0f44cf076ece43929_img.jpg\) Real-time gamification](#)